

REVENDICATIONS

- 1.- A thermal printer composed globally of a plurality of modules assembled together in an implicit reversible manner to enable, from a combination of modules, to provide a range of distinct printers, said printer associating :
- a) a thermal printing head of a band conditioned into a roll, slaved to electronic means for controlling the operation thereof, which are fitted with associating means respectively with a source of electric energy, with general printing control means and with the thermal printing head,
 - b) means for conveying the band from a magazine holding the roll against the thermal printing head, said conveying means comprising motorised means (7) for driving the band, a resilient back-up roll (24) of the band against the printing head, and a cutter (23) for the separation of a portion of printed band,
 - c) a first member carrying the band roll, in which member is provided the magazine (25) rotatably housing the roll,
 - d) a second member carrying electronic control means, fitted with nesting means easily reversible with the first carrying member,
- characterised in that it comprises :
- a) a first module (1) formed mainly of a printing mechanism (4) comprising a chassis (5) carrying the printing head, motorised means (7) for driving the band, and of a flexible connector (8) for associating the printing mechanism (4) with the electronic control means (11, 12, 12'),
 - b) a second module (2) mainly composed of the second carrying member (9,10), which supports on the one hand means (30, 31) for controlling the operation of the printer by the operator partaking of the general printing control means, and on the other hand the electronic control means (11, 12, 12') as well as the means (19, 34; 35; 36) wherewith they are fitted for association with the source of electric energy (20, 21), with remote control means (6) partaking of the general printing control means, and with the driving means (30, 31),

5 c) a third module (3) mainly composed of the first carrying member (17), the latter being provided with general nesting means easily reversible on the one hand of the chassis (5) partaking of the first module (1) and on the other hand of the second carrying member (9,10) partaking of the second module (2).

2.- A printer according to claim 1, characterised :
 10 in that the second carrying member comprises a first support (9) fitted with means co-operating with easily reversible first elementary nesting means installed on the first carrying member (17), said first support (9) carrying the driving means (30, 31) as well as first electronic control means (11) and related associating means (19, 35, 36).

15 3.- A printer according to claim 2, characterised :
 in that the second carrying member comprises moreover a second support (10). carrying second electronic control means (12, 12') and related associating means (19, 34; 35, 36), substitutive of electronic control means (11) and related
 20 associating means (19, 34, 35, 36), said second support (10) being fitted with means co-operating with easily reversible second elementary nesting means installed on the first carrying member (17), said second electronic control means (12,12') and the related associating means (19, 34, 35, 36) comprising means analogous
 25 to the first electronic control means (11) and to the first related associating means, complemented by any at least management means (14) specific to the source of electric energy (20, 21), of specific electronic control means (15) partaking of the general printing control means and of means for storing information (16)
 30 transmitted remotely by the remote printing control means (6)

4.- A printer according to claim 3, characterised :
 in that the second electronic control means comprise
 35 substitution alternative elementary electronic control means (12, 12'), which are supported by the second support (10), first

elementary means (12) of said second electronic control means being fitted with associating means (34) with a stand-alone source of electric energy (20), while second elementary means (12') of these second control means are fitted with associating means (19) with the electric energy supply mains (21).

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- 5.- A printer according to claim 3, characterised :
in that the second support is mainly composed of a nesting dummy cover (10) easily reversible on the first carrying member (17), at the rear face of which cover (10) and at the rear of the first carrying member (17), is added by easily reversible nesting an electronic board (22,29) carrying the second electronic control means (12, 12') complemented by the related means (14, 15, 16).
- 6.- A printer according to claim 5, characterised :
in that the cover (10) includes in the middle zone of its thickness a peripheral shoulder (27) bearing flat against a panel.
- 7.- A printer according to claim 6, characterised :
in that it includes a rear closing shell (26) against which rests the cover (10) via its peripheral shoulder (27).
- 8.- A printer according to any of the claims 4, 5 and 7, characterised :
in that the stand-alone source of electric energy (20) comprises at least one battery carried by the rear face of the electronic board (29) which moreover carries first elementary means (12) of the second electronic control means and of the related associating means (34, 35, 36), said battery (20) being housed in a space provided between the shell (26) and the electronic board (29), the latter (29) forming a separation wall for mechanic and electrostatic protection of the printing mechanisms (4) and of the control means (12).
- 9.- A printer according to any of the claims 7 and 8, characterised :
in that the shell (26) is fitted at its rear face with easily

reversible nesting means with a base (33).

- 10.- A printer according to any of the previous claims, characterised :
 5 in that the driving means (30, 31) comprise at least one pusher (30) for implementing the motorised means (7) for driving the band, and at least one pusher (31) for implementing the printing mechanism (4), related to a means (32) for visualising the operating state of the printer.
- 10 11.- A printer according to any of the previous claims, characterised:
 in that the cutter (23) is mounted in an easily reversible manner on the chassis (5) of the first module (1).
- 15 12.- A printer according to any of the previous claims, characterised :
 in that the back-up roll (24) is mounted on the first carrying member (17) of the third module (3).
- 20 13.- An application of a printer according to claim 1 to a basic printer, characterised :
 in that it comprises :
 a) a first module (1) formed mainly of a printing mechanism (4) comprising a chassis (5) carrying a printing head, motorised means (7) for driving the band, of a flexible connector (8) for associating the printing mechanism (4) with remote electronic control means (11), and of a cutter (23) for separating a portion of
 25 printed band,
 b) a second module (2) mainly composed of a second carrying member (9), which supports in an easily reversible manner on the one hand means (30, 31) for controlling the operation of the
 30 printer, and on the other hand the electronic control means (11) fitted with associating means (35, 19, 36) with remote electronic control means (6), with a remote source of electric energy (21), and with the driving means (30, 31),
 c) a third module (3) mainly composed of a first carrying member
 35 (17) supporting in an easily reversible manner on the one hand the

chassis (5) partaking of the first module (1) and a back-up roll (24) of the band against the printing head, and on the other hand the second carrying member (9) partaking of the second module (2).

- 5 14.- An application of a printer according to claim 1 to a panel printer, characterised :

in that it comprises :

- 10 a) a first module (1) formed mainly of a printing mechanism (4) comprising a chassis (5) carrying a printing head, motorised means (7) for driving the band, of a flexible connector (8) for associating the printing mechanism (4) with remote electronic control means (11), and of a cutter (23) for separating a portion of printed band.

- 15 b) a second module (2) mainly composed of a second carrying member (9), which supports in an easily reversible manner on the one hand means (30, 31) for controlling the operation of the printer by the operator and on the other hand the electronic control means (11) fitted with associating means (35, 19, 36) with remote electronic control means (6), with a remote source of electric energy (21) and with the driving means (30, 31),
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- c) a third module (3) mainly composed of a first carrying member (17) supporting in an easily reversible manner on the one hand the chassis (5) partaking of the first module (1) and a back-up roll (24) of the band against the printing head, and on the other hand the second carrying member (9) partaking of the second module (2),
- 25 d) a nesting dummy cover (10) easily reversible on the first carrying member (17), which includes in the middle zone of its thickness a peripheral shoulder (27) bearing flat against a panel.

- 30 15.- An application of a printer according to claim 1 to a panel printer, characterised :

in that it comprises :

- 35 a) a first module (1) formed mainly of a printing mechanism (4) comprising a chassis (5) carrying a printing head, motorised means (7) for driving the band, of a flexible connector (8) for

associating the printing mechanism (4) with remote electronic control means (12, 12'), and of a cutter (23) for separating a portion of printed band,

- 5 b) a second module (2) mainly composed of a second carrying member (9), which supports in an easily reversible manner on the one hand means (30, 31) for controlling the operation of the printer by the operator and on the other hand the electronic control means (12, 12') fitted with associating means (35, 19, 34, 36) with remote electronic printing control means (6), with a source of electric energy (20, 21), and with the driving means (30, 31), said electronic control means (12, 12') being complemented by any at least management means (14) specific to the source of electric energy (20, 21), integrated electronic control means (15) and means for storing information (16) transmitted remotely by the remote printing control means (6),
- 10 c) a third module (3) mainly composed of a first carrying member (17) supporting in an easily reversible manner on the one hand the chassis (5) partaking of the first module (1) and a back-up roll (24) of the band against the printing head, and on the other hand the second carrying member (9) partaking of the second module (2),
- 15 d) a nesting dummy cover (10) easily reversible on the first carrying member (17), which includes in the middle zone of its thickness a peripheral shoulder (27) bearing flat against a panel.

25 16.- An application of a printer according to claim 1 to a portable printer, characterised :

in that it comprises :

- 30 a) a first module (1) formed mainly of a printing mechanism (4) comprising a chassis (5) carrying a printing head, motorised means (7) for driving the band, of a flexible connector (8) for associating the printing mechanism (4) with the remote electronic control means (12), and of a cutter (23) for separating a portion of printed band,
- 35 b) a second module (2) mainly composed of a second carrying member formed of a first support (9) and of a second support (10),

the first support (9) carrying driving means (30, 31) for operating the printer by the user, the second support (10) being arranged as a dummy cover and supporting in an easily reversible manner on the one hand a battery (20) providing a source of electric energy, and on the other hand the electronic control means (12) fitted with means (35, 34, 36) for association with remote electronic control means (6), with a source of electric energy (20), and with the driving means (30, 31), said electronic control means (12) being complemented by any at least management means specific (14) of the source of electric energy (20), integrated electronic control means (15) and means for storing information (16) transmitted remotely by the remote printing control means (6),

c) a third module (3) mainly composed of a first carrying member (17) supporting in an easily reversible manner on the one hand the chassis (5) partaking of the first module (1) and a back-up roll (24) of the band against the printing head, and on the other hand the first support (9) and the second support (10) forming the second carrying member,

d) a rear closing shell (26) which can be added in an easily reversible manner on the second support (10), said shell (26) providing a space for accommodating the battery (20) between the rear face of the printer and a board (29) carrying the electronic means (12, 14, 15, 16) of the second module (2) and of the battery (20), said board (29) forming a separation wall with mechanical and electrostatical insulation.

17.- An application of a printer according to claim 1 to an office printer, characterised :

in that it comprises :

a) a first module (1) formed mainly of a printing mechanism (4) comprising a chassis (5) carrying a printing sheet metal, motorised means (7) for driving the band, of a flexible connector (8) for associating the printing mechanism (4) with the remote electronic control means (12'), and of a cutter (23) for separating a portion of printed band,

- b) a second module (2) mainly composed of a second carrying member formed of a first support (9) and of a second support (10), the first support (9) carrying driving means (30, 31) for operating the printer by the user, the second support (10) being arranged as a dummy cover and supporting in an easily reversible manner the electronic control means (12') fitted with associating means (35, 19, 36) with remote electronic printing control means (6), with a source of electric energy (21), and with the driving means (30, 31), said electronic control means (12') being complemented by any at least of management means specific (14) of the source of electric energy (21), of integrated electronic control means (15) and of means for storing information (16) transmitted remotely by the remote printing control means (6), the source of electric energy (21) being a remote source.
- c) a third module (3) mainly composed of a first carrying member (17) supporting in an easily reversible manner on the one hand the chassis (5) partaking of the first module (1) and a back-up roll (24) of the band against the printing head, and on the other hand the first support (9) and the second support (10) forming the second carrying member,
- d) a rear closing shell (26) which can be added in an easily reversible manner on the second support (10).